

ORIGINAL
EX PARTE OR LATE FILED

KELLOGG, HUBER, HANSEN, TODD & EVANS, P.L.L.C.

MICHAEL K. KELLOGG
PETER W. HUBER
MARK C. HANSEN
K. CHRIS TODD
MARK L. EVANS
STEVEN F. BENZ
NEIL M. GORSUCH
GEOFFREY M. KLINEBERG
REID M. FIGEL

SUMNER SQUARE
1615 M STREET, N.W.
SUITE 400
WASHINGTON, D.C. 20036-3209
(202) 326-7900
FACSIMILE:
(202) 326-7999

HENK BRANDS
SEAN A. LEV
EVAN T. LEO
ANTONIA M. APPS
MICHAEL J. GUZMAN
AARON M. PANNER
DAVID E. ROSS
SILVIJA A. STRIKIS
RICHARD H. STERN, OF COUNSEL

August 8, 2001

VIA HAND DELIVERY

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

RECEIVED **EX PARTE**

AUG 8 2001

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Re: Ex Parte Communication in ET Docket No. 98-206/ RM-9147; RM-9245; Applications of Broadwave USA et al., PDC Broadband Corporation, and Satellite Receivers, Ltd., to provide a fixed service in the 12.2-12.7 GHz Band; Requests of Broadwave USA et al. (DA 99-494), PDC Broadband Corporation (DA 00-1841), and Satellite Receivers, Ltd. (DA 00-2134) for Waiver of Part 101 Rules.

Dear Ms. Salas:

On August 7, 2001, Sophia Collier, Chula Reynolds, Antoinette Cook Bush, and Bob Combs of Northpoint Technology, Ltd. ("Northpoint"), met with Peter Tenhula, Adam Krinsky, Lauren Van Wazer, and Monica Desai, who serve as legal advisors to, respectively, Chairman Powell, Commissioner Tristani, Commissioner Copps, and Commissioner Martin.

Also on August 7, 2001, the same Northpoint representatives met with Barry Ohlson, Thomas Stanley, and Michael Pollak of the Commission's Wireless Telecommunications Bureau.

The purpose of both meetings was to discuss outstanding technical issues in the above-captioned matters, including the proper sharing criteria for terrestrial and DBS satellite services in the 12.2-12.7 GHz band. The attached materials served as a basis for discussion. Page 12 of the briefing (describing the Northpoint Deployment at USA Today During Washington Operations in 1999) contained an error that has been corrected in the attached version.

Also distributed to Ms. Desai was a packet of materials discussing the MITRE report that was previously filed as an appendix to Northpoint's May 3, 2001, ex parte

No. of Copies rec'd
List ABCDE

0+18

Ms. Magalie Roman Salas
August 8, 2001
Page 2

filing describing a meeting with Commissioner Gloria Tristani. Copies of that packet of materials will be sent to Mr. Tenhula, Mr. Krinsky, and Ms. Van Wazer under separate cover.

Eighteen copies of this letter and its attachments are enclosed – two for inclusion in each of the above-referenced files. Please contact me if you have any questions.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Jc Rozendaal". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

J. C. Rozendaal

*Counsel for Northpoint
Technology, Ltd.*

cc: meeting participants

Topics in Today's Briefing

- Spectrum sharing - general technical overview
- Appropriate interference criterion for sharing between DBS and Northpoint
 - Northpoint proposal for EPFD based on 20 dB C/I
 - Fully protects DBS and prevents harmful interference
 - Precedents for this proposal
 - DBS proposal (2.86%)
 - Severely constrains Northpoint
 - No corresponding benefit to public

What is Harmful Interference in the Digital Age?

- FCC rules define harmful interference as “serious degradation” or “repeated interruption” to a radiocommunication service. (S 2.1)
- Analog television services - static or snow on the screen.
- Digital technologies are more robust than analog - provide a consistent, high quality user experience over a wider range of operating values.
- Harmful interference to digital services – abrupt failure with a very brief (seconds only) transition time between perfect reception and outage.

Carrier to Interference Ratio (C/I)

- Interference - the signal of one service is sufficiently strong that it overpowers the other signal and causes an outage.
- The relative strength of one signal to another is calculated as a ratio of "Carrier to Interference" ("C/I") using a logarithmic scale called decibels ("dB").
- DBS - outage occurs at C/I ratios between 3.5 – 6.5 dB.
- Northpoint proposes it provide all DBS customers with a minimum 20 dB of protection.
- DBS argues that Northpoint be required to provide a minimum of approximately 28 dB of protection.

The Decibel Scale (dB)	
dB	Ratio
0	1 to 1
3	1 to 2
7	1 to 5
10	1 to 10
17	1 to 50
20	1 to 100
28	1 to 600
30	1 to 1,000
40	1 to 10,000

A scale commonly used to measure the ratio of one signal power to another

All Parties' Technical Filings Agree Northpoint Would Never Cause An Outage in Clear Air

- Heavy rain storms clouds, lightning and large rain drops can cause DBS outages in some cases.
- DBS contends that Northpoint could “increase unavailability” by adding incrementally to the duration of rain outages.

DBS Stated Availability and Unavailability in Washington D.C. (per year)					
Available	Unavailable	Total hours in a year	Total hours unavailable	Annual average television hrs (Nielsen)*	Annual television hours unavailable
99.95%	0.05%	8,768	4.4	2,557	1.28

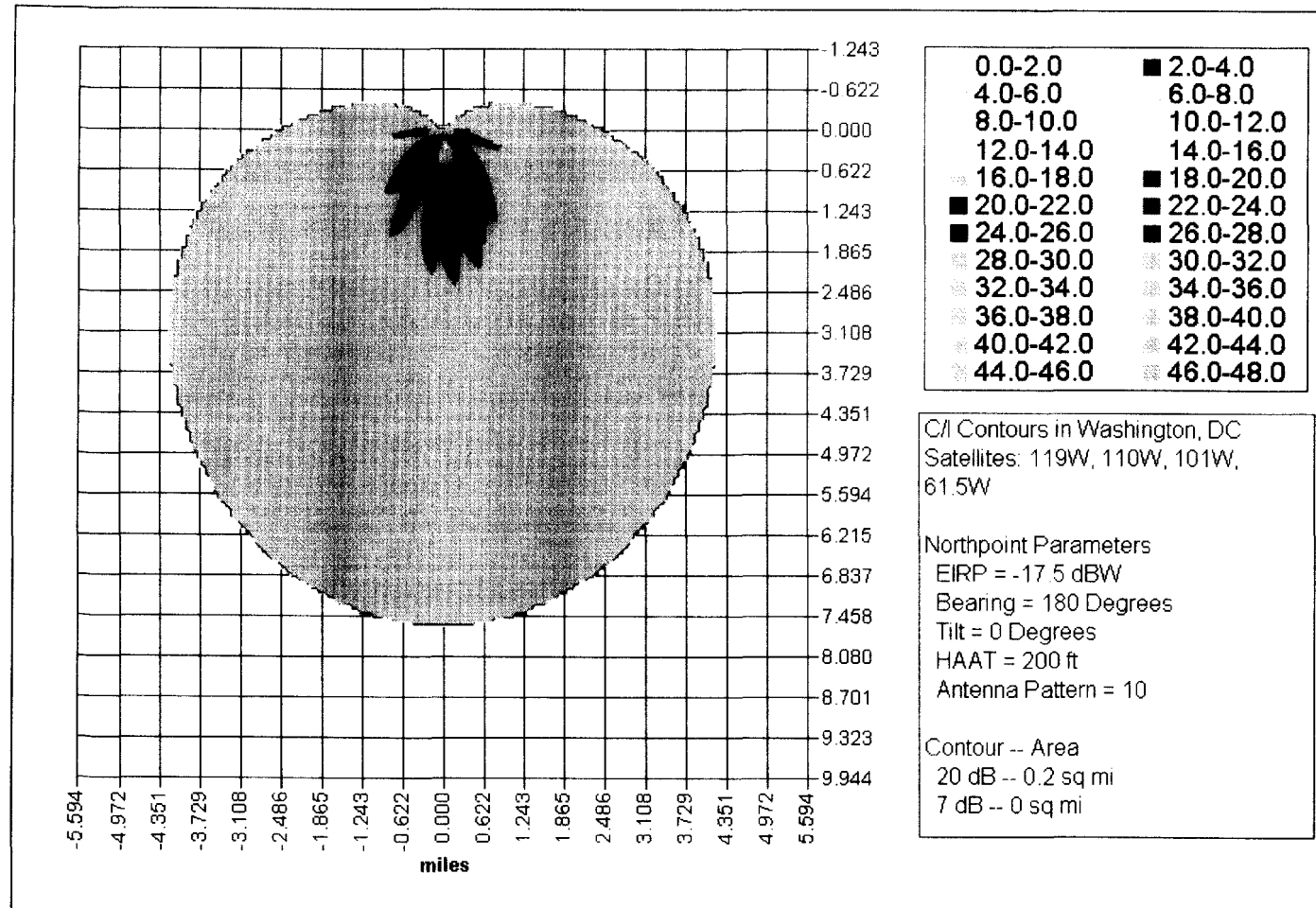
- Availability is a statistical estimate only - based on input assumptions.

* Nielsen studies have shown television is on in the home 7 out of 24 hours (29%)

Contours Define Mitigation Regions in Spectrum Sharing Studies

- “Contour” diagrams plot the degree of overlap between signals and highlight any “mitigation zones” – areas where the overlap exceeds a targeted C/I ratio.
- Contours diagrams account for:
 - Specific system characteristics (transmit and receive antennas etc.)
 - “Free space loss” - the fact that when a radio signal doubles its distance its intensity is quartered
 - Signals near the transmitter are dramatically higher than signals even 100 yards away.
- When spectrum is shared, signals emanate from several sources, each with a different strength due to differences in original power and distance from its source.
- Contour maps make it easy to visualize and understand these factors.

Example of Contour Plot



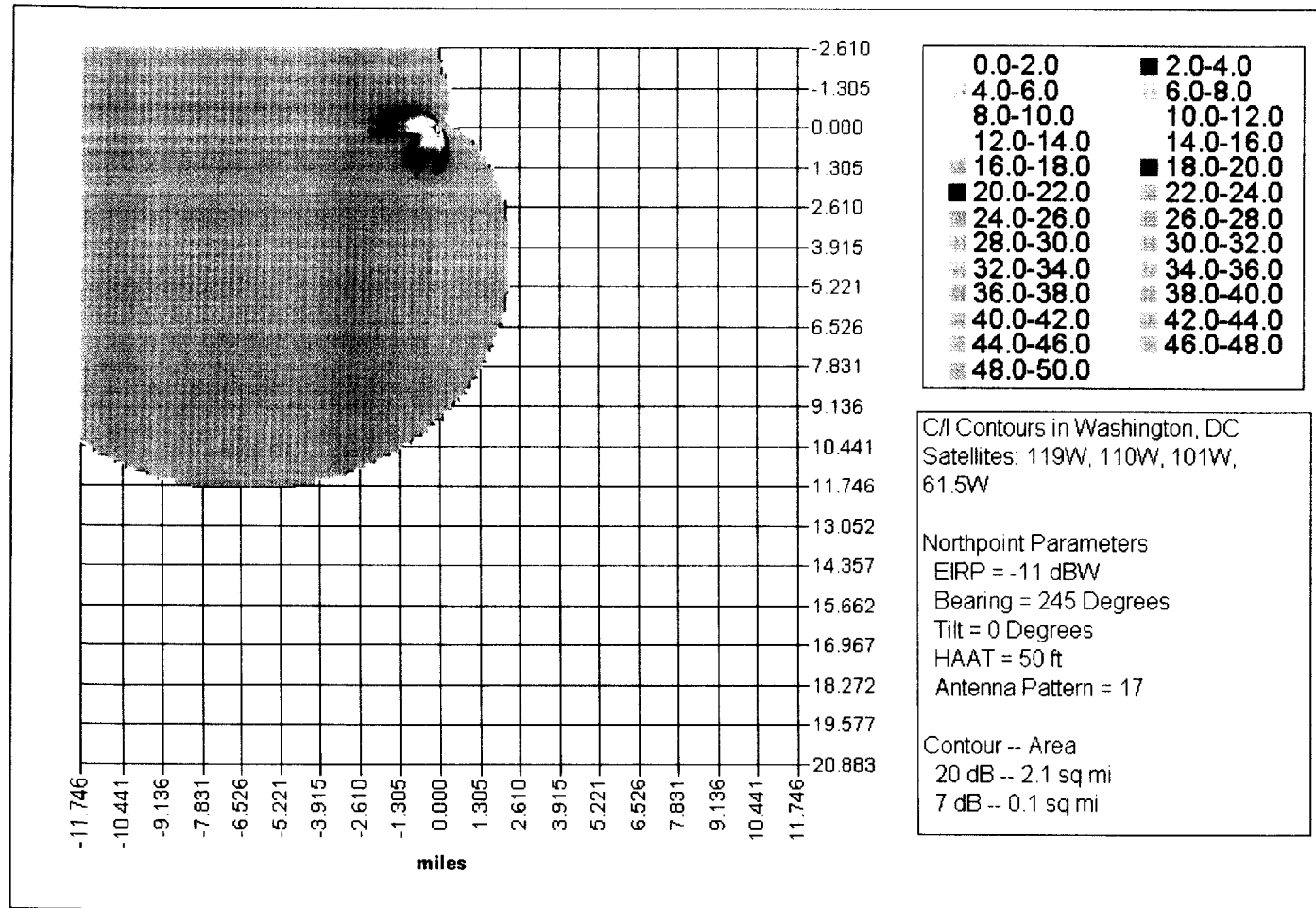
Special Issues In Satellite and Terrestrial Sharing Contours

- Satellite signals - fairly uniform across a service area.
- Terrestrial signals are much closer to their source transmitter and therefore show a much greater degree of variability across the service area.
- When satellite and terrestrial signals are plotted together, the highest terrestrial power will be in the immediate vicinity of the transmitter.
- Summary of areas of agreement:
 - No interference potential during clear air – potential for concern is on rain days only (increased unavailability).
 - Interference concern is confined to a contour around Northpoint transmitter.

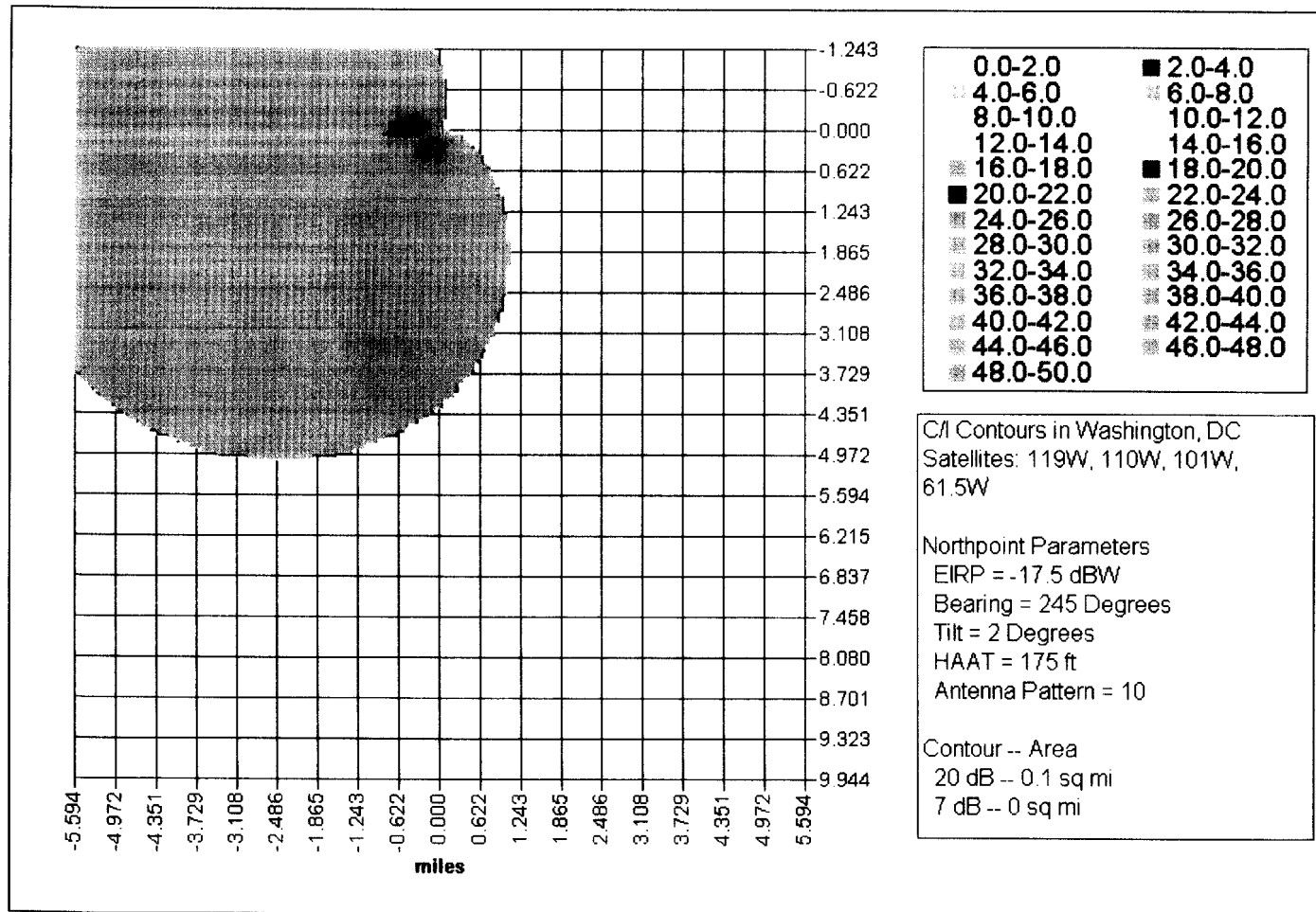
Contour Studies

- Contour studies are used as a design tool when individual cells are planned for an actual deployment.
- Contour studies can also provide a vivid demonstration of how Northpoint technology works:
 - Wide variety of options to design cells.
 - Achieve a substantial, reliable service area for Northpoint customers.
 - Prevent harmful interference to DBS.
- Demonstration – basic cases.

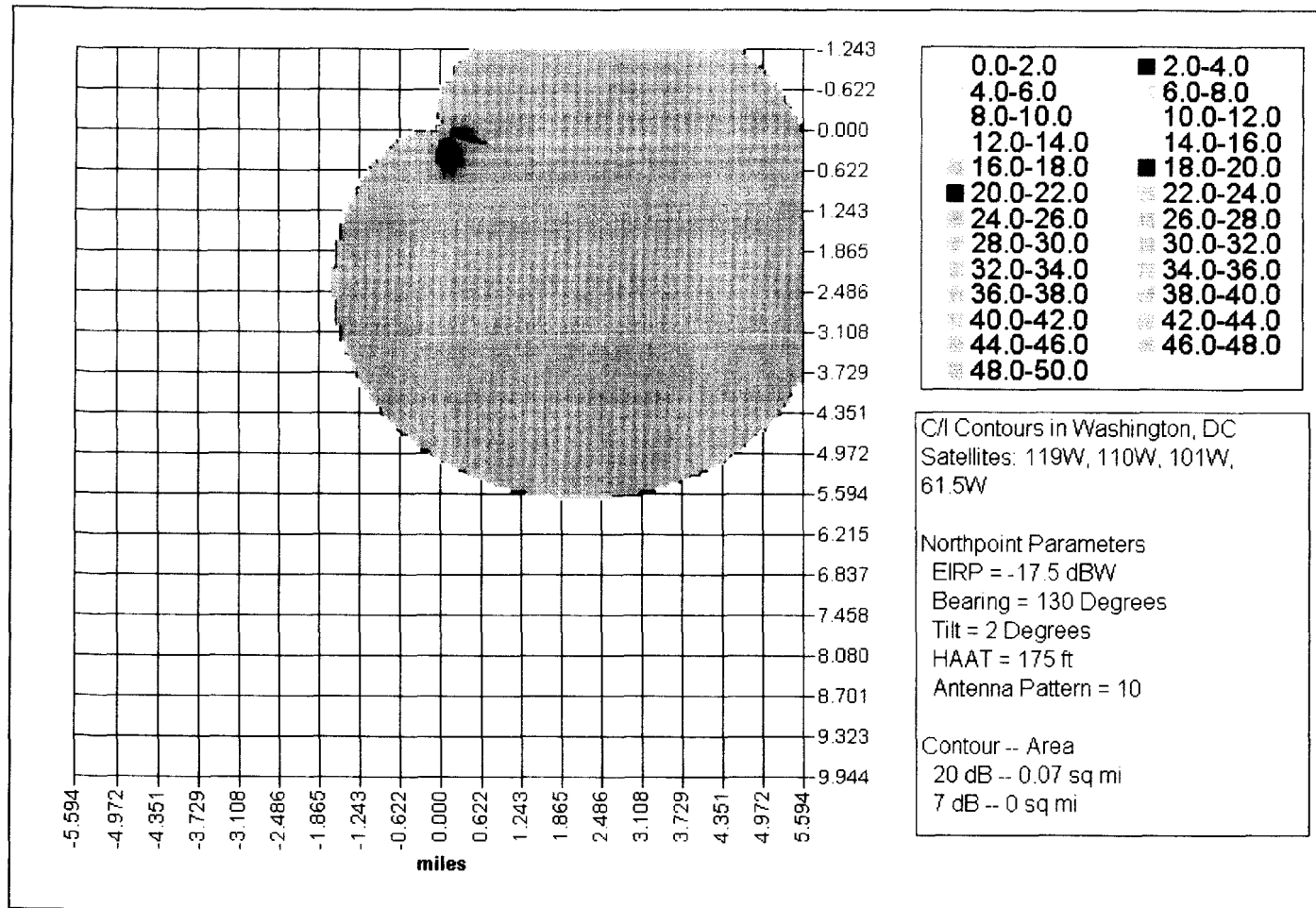
Sample Site 1: Without Northpoint Optimization



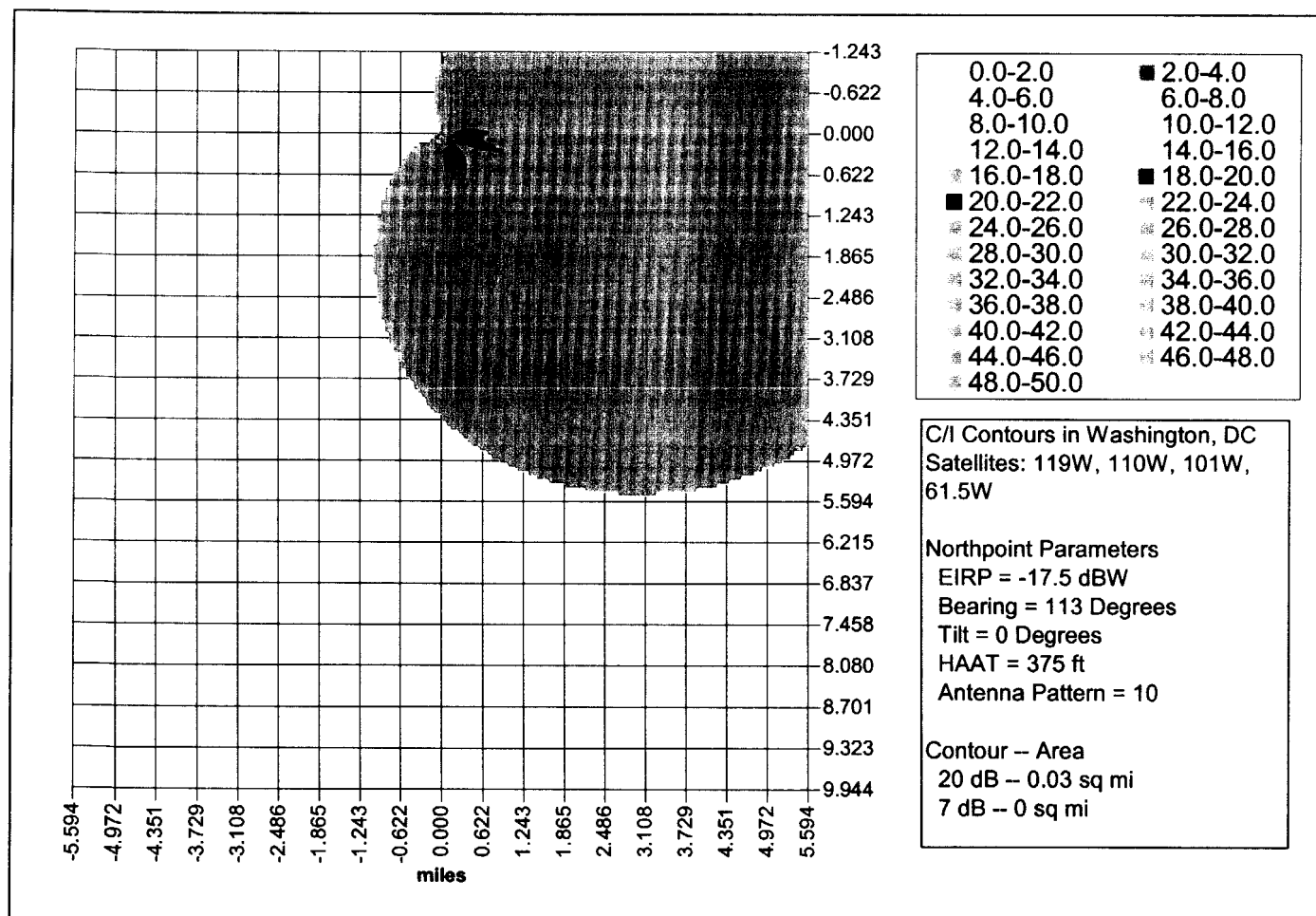
Sample Site 1: With Northpoint Optimizations



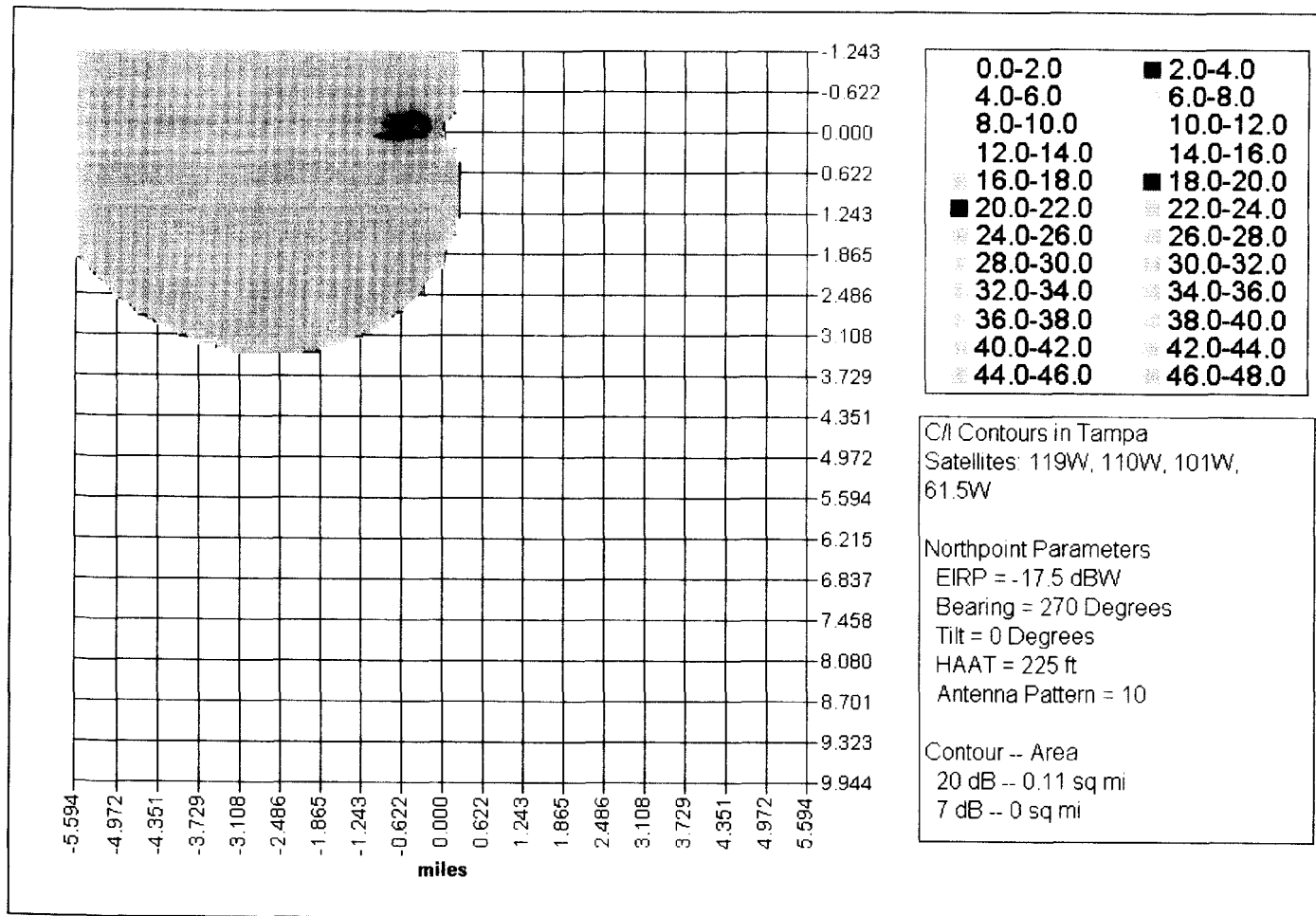
Sample Site 1 – Demonstration of Moving the Mitigation Zone



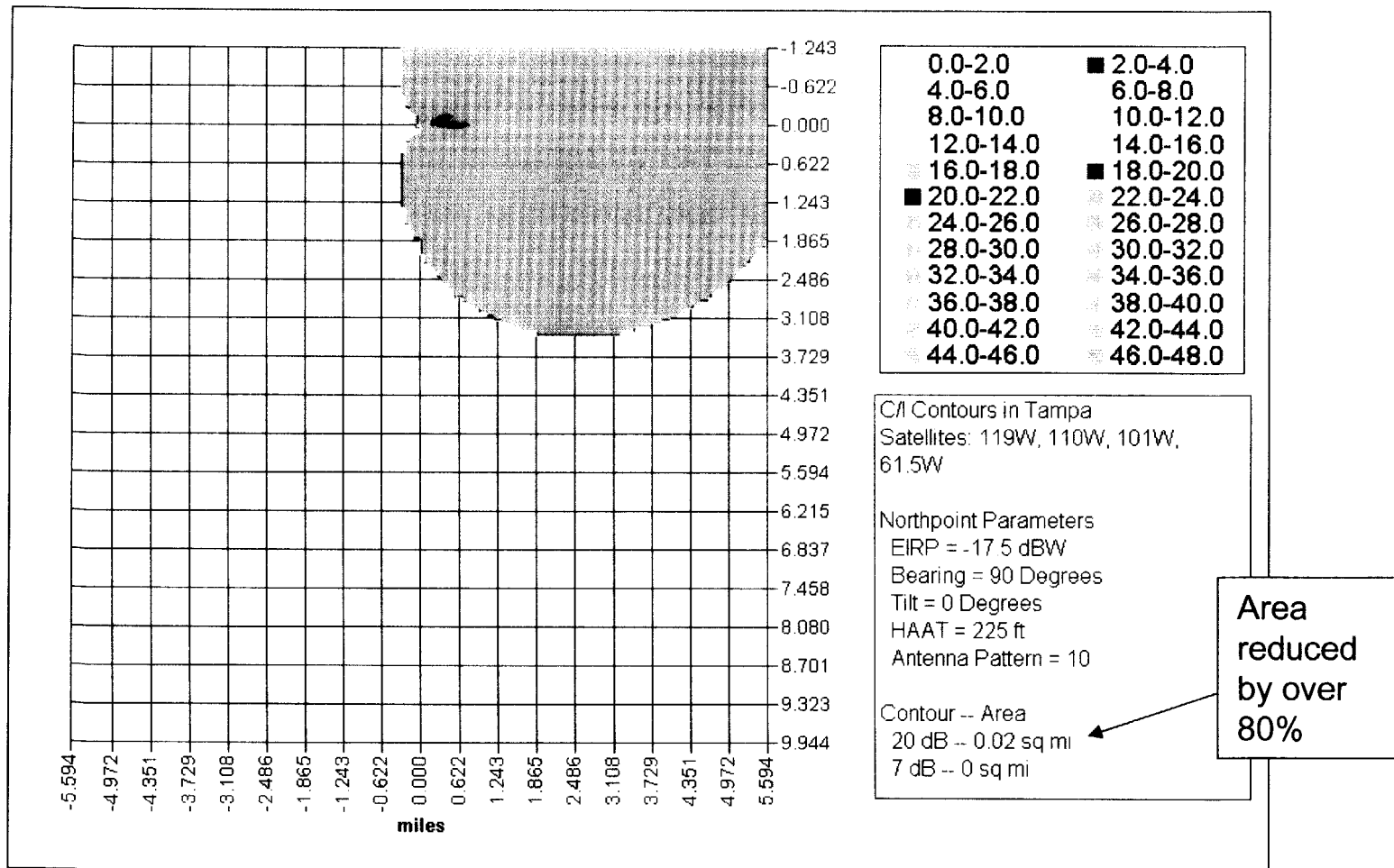
Northpoint Deployment at USA Today During Washington Operations in 1999



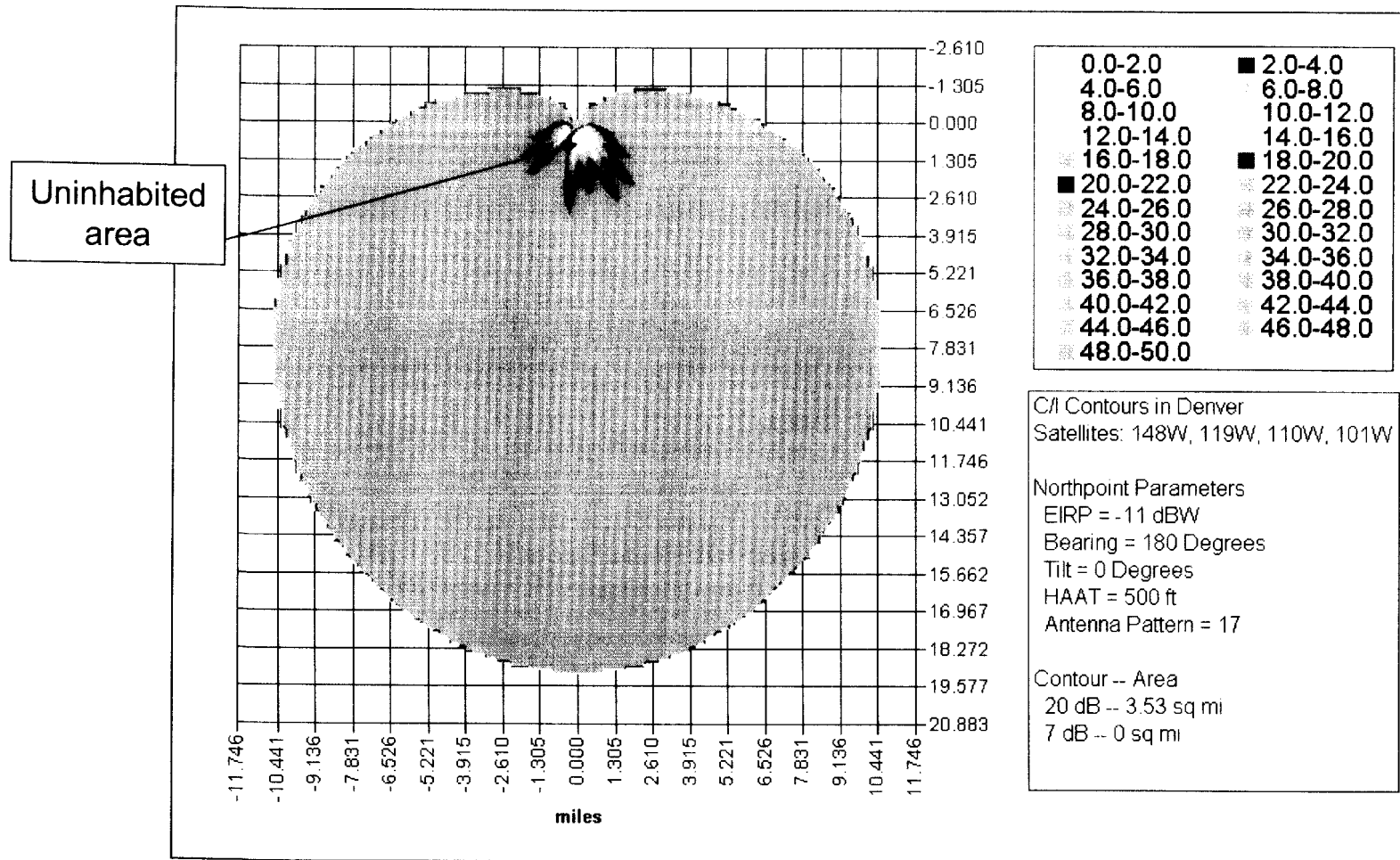
Tampa: Transmitter Bearing = 270 Degrees



Tampa: Transmitter Bearing = 90 Degrees Demonstration of Using Rotation to Reduce Mitigation Zone



Rural Area: Transmission from a Mountain



The Washington Conceptual Deployment

- Conceptual Deployment demonstrates Northpoint principals used in a large area
 - Over 1,300,000 total households in Conceptual Deployment region
 - Over 1,800 square miles in total area
 - 24 Northpoint cells
 - Total households within mitigation zone: 289 households
 - On the average fewer than 20% (58 households) would be likely to have DBS*

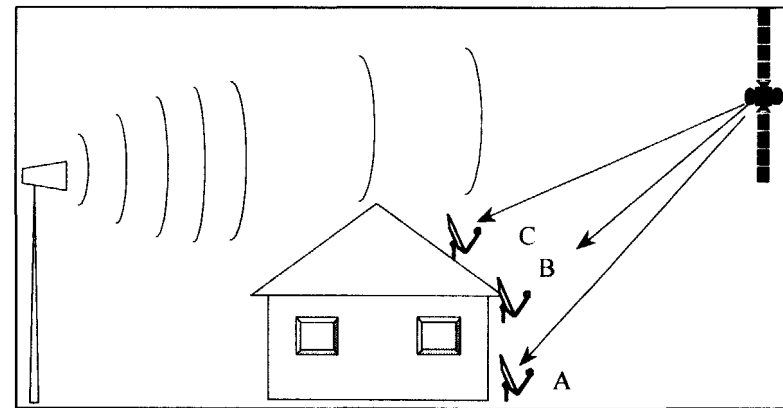
*Actual DBS usage among all households in Washington, D.C. is 8.3% according to Sky Trends 4/01 (9.22% multiplied by a 90% SkyTrend multi-receiver factor)

Natural Shielding – A Real World Factor Present at 86% of All DBS Consumers

- Contour maps are drawn in an idealized way - as if the earth were flat.
 - Real landscapes have natural features that significantly reduce the potential for interference.
- Most DBS dishes are located on porches, chimneys, low points on roofs, etc., with an obstacle between the Northpoint transmitter and the consumer dish.
- A national consumer survey of DBS consumers* conducted for Northpoint in July 1999 showed that 86% of all DBS dishes have natural shielding from a Northpoint signal.

* Bennett, Petis & Blumenthal

86% of satellite dishes are positioned as shown

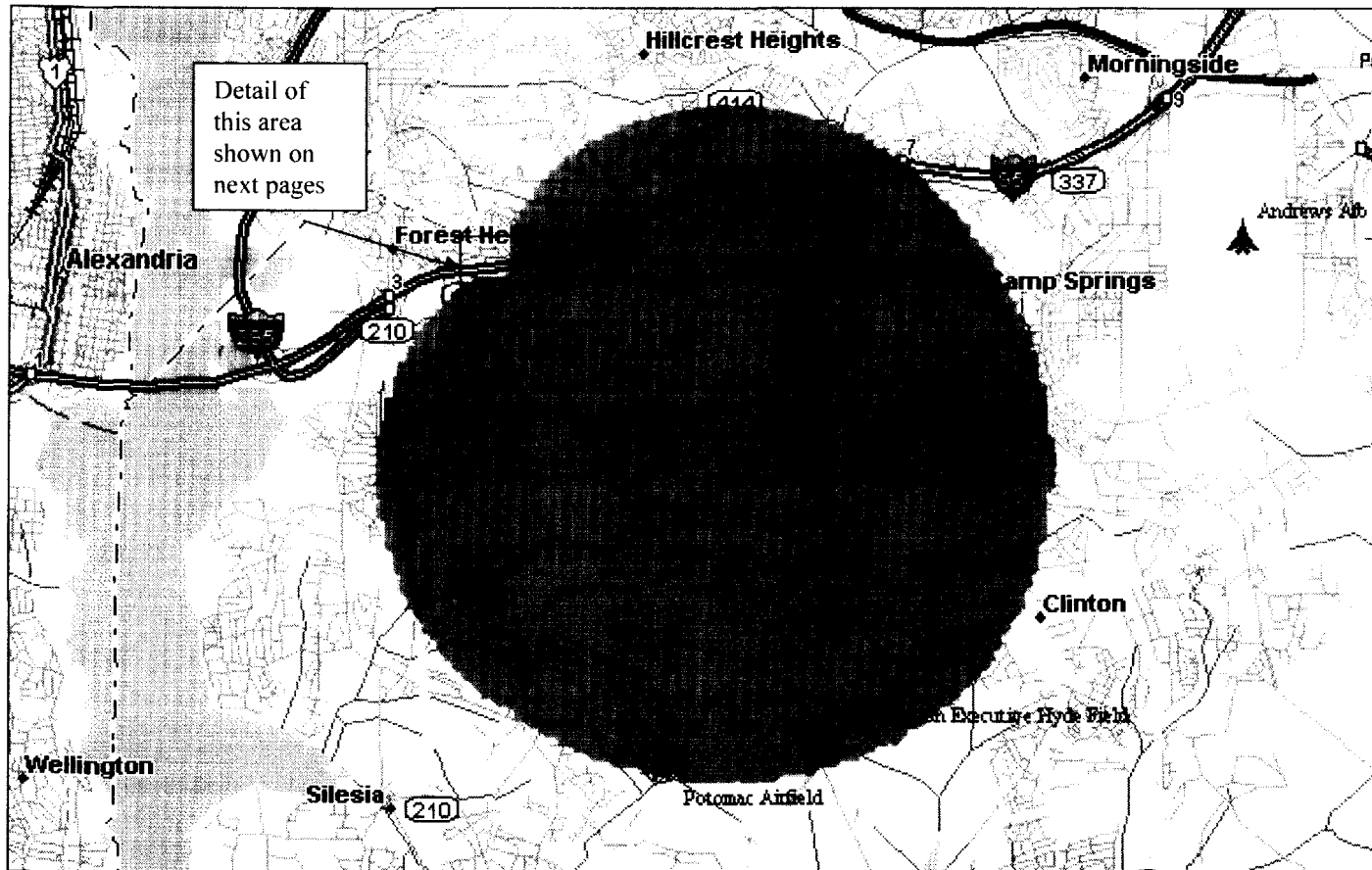


Washington, D.C.	HH Current 8.3% DBS	HH 20% DBS
Total households	1.3M	1.3M
HH within 20 dB contour	289	289
Potential DBS subscribers*	24	58
No natural shielding (14%)	3	8

Examination of a Particular Mitigation Zone

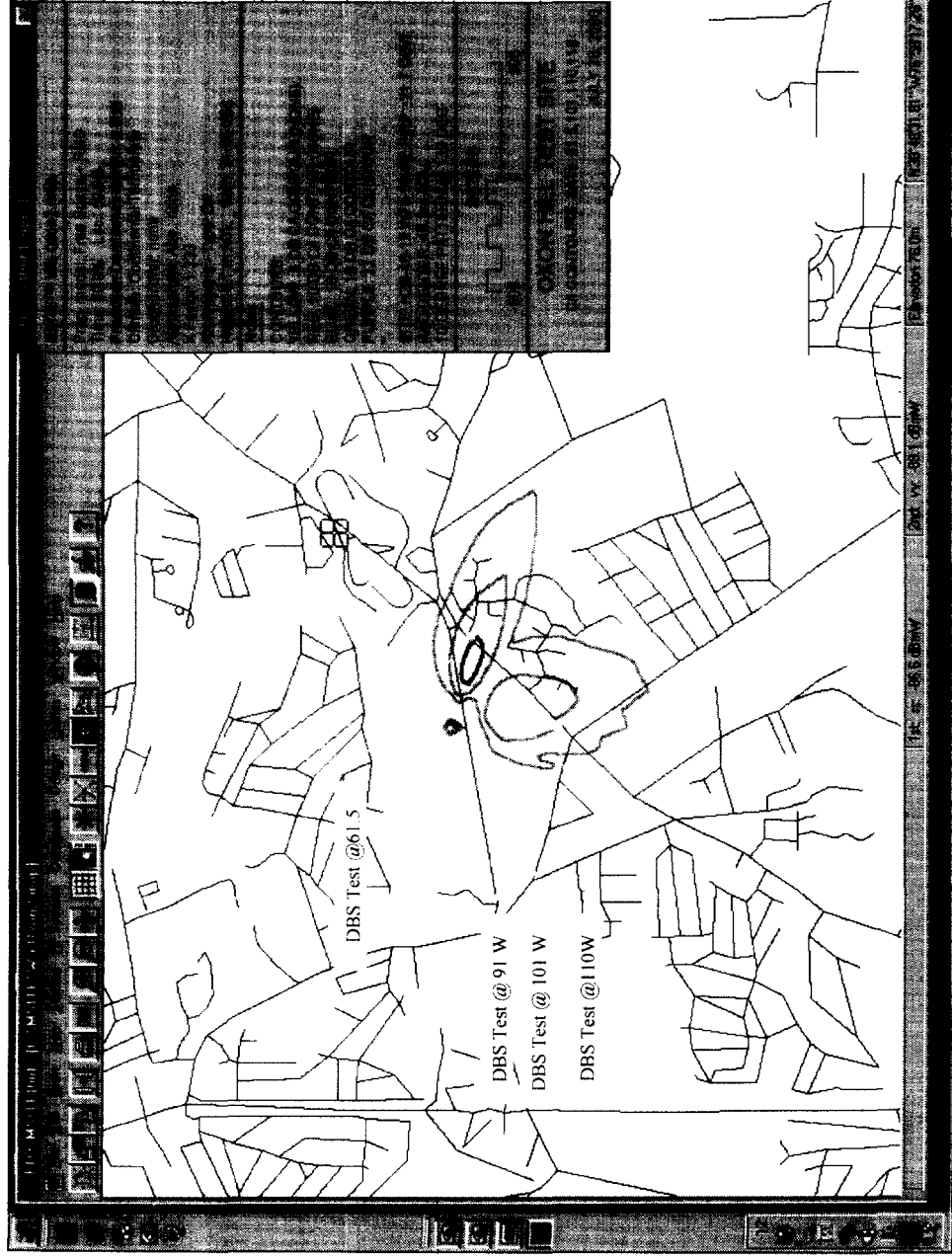
- In 2000 DBS performed its own “tests” and operated its own “Northpoint transmitter” at one of the locations in the Northpoint Conceptual Deployment:
 - Office building in Oxon Hill, Maryland
 - Worst case location in the Conceptual Deployment (highest number of potential households in mitigation area)

The Oxon Hill Service Area



The green area defines the approximate border of the service area of the Oxon Hill cell, an area of approximately 32 square miles.

Oxon Hill Deployment as Specified by Northpoint



Results of DBS Oxon Hill Operations

- *DBS did not identify even a single DBS customer whose service would be impaired in any way from Northpoint operations at Oxon Hill.*
- DBS readings were taken very near transmitter in parking lots and along the road where no DBS customers could be located.
- In a final effort to show harmful interference from Northpoint, DBS turned up its power approximately 30 times the level specified by Northpoint causing DBS test dishes to fail to receive.
 - Northpoint used DBS test-to-failure transmissions to demonstrate the use of flat panel antennas to mitigate interference.
 - Flat panel never failed even at highest DBS power.
 - Proof that Northpoint has available the means to mitigate even very high power operations.

MITRE Report

- The MITRE report confirms Northpoint filings and Commission Decision.
- Handout

Northpoint Proposal

- Northpoint proposal:
- Adopt a power limit (called an EPFD) as an interference criterion.
 - 20 dB C/I ratio (23 dB for high powered DBS links) to all DBS customers.
 - Analysis shows that 20 dB will ensure that no DBS customer have greater than 10% increase in unavailability and most will have much higher protection as a result of free space loss.
 - 10% is same allowance afforded to NGSO systems in this proceeding.
- Consistent with current FCC proceeding:
 - Northpoint EPFD proposal meets “10 minutes in worst month” Commission proposal found in NFPRM.
 - NGSOs interference criterion is an EPFD based on a 10% increase in unavailability.